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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/511,639

11/28/2005

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YOM-0121

6337

23413 7590 08/04/2008  
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EXAMINER

OJURONGBE, OLATUNDE S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/04/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/511,639	<b>Applicant(s)</b> KANG ET AL.	
	<b>Examiner</b> OLATUNDE S. OJURONGBE	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20070419; 20041018</u> .                                      | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1-9 in the reply filed on 14 May, 2008 is acknowledged.

Claims 10-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim.

### ***Claim Objections***

2. **Claims 3, 5, 7 and 9** are objected to because of the following informalities:

The use of brackets for the terms chemical formula 1, chemical formula 2, chemical formula 3, chemical formula 4 and chemical formula 5 in claims 3, 5 and 7 respectively makes it unclear as to whether the applicant is trying to delete these terms, if so, for clarity purpose, these terms should be stroke out using single lines.

Claim 9 cites "The method according to claim 1, wherein hybridizing and condensing"; Hybridizing and hydrolyzing are two distinct processes, for clarity purpose, hybridizing should be changed to hydrolyzing since hydrolyzing is disclosed in claim 1. Hydrolyzing is used for the purpose of this office action.

Appropriate corrections are required.

### ***.Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1-9** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear as to whether in claim 1 the first mixture is selected from the three mentioned mixtures or a combination of all three mixtures is being required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-9** are rejected under 35 U.S.C. 102(b) as being anticipated by Weidner et al (US 5,548,053) as evidenced by Salome "Synthesis of silanol".

Regarding **claim 1**, Weidner et al teaches a process for the preparation of organopolysiloxane (col.1, lines 39-40) which comprises reacting at least one silane of the formula:

- $R_3SiOR^1$  and/or a hydrosylate thereof  $R_3SiOSiR_3$  (col.1, lines 45-51);
- $(R^5_2SiO)_b$  (col.2, lines 5-11) ;

with water, in the presence of acid, a base and at least an amount of organic solvent (col.2, lines 13-20); and exemplifies adding 50% strength paratoluene-sulfonic acid in ethanol to hexamethyldisiloxane and tetraethoxysilane (col.9, lines 26-29) followed by 40% strength solution of methylamine in water (col.9, lines 35-37).

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The ethanol of the 50% strength paratoluene-sulfonic acid in ethanol mixes with the hexamethyldisiloxane and tetraethoxysilane to form the first mixture of the instant claim and 40% strength solution of methylamine in water serves as the water and catalyst of the instant claim. Hydrolysis and condensation of the first mixture inherently takes place.

Hexamethyldisiloxane and tetraethoxysilane serve as the oxidized hydrosilane and silane of the second mixture of the instant claim respectively.

Though Weidner et al does not explicitly teach the hexamethyldisiloxane as an oxidized hydrosilane, it is known in the art, as evidenced by Salome, that silanol can be prepared either by the hydrolysis of silanes or oxidation of hydrosilanes; the formed silanol undergoes self condensation or catalytic condensation to form siloxanes an example of which is hexamethyldisiloxane.

Regarding **claims 2-4**, Weidner et al teaches all the claim limitations as set forth above.

Though Weidner et al does not teach that the hexamethyldisiloxane is prepared by the method of the instant claim, the examiner notes that this is a product-by-process limitation; even though a product-by-process is defined by the process steps by which the product is made, determination of patentability is based on the product itself. Hence, the manner in which the hexamethyldisiloxane is formed does not confer patentability to the claim.

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Regarding **claim 5**, Weidner et al teaches all the claim limitations as set forth above and further teaches that decamethylcyclopentasiloxane is a preferred organosiloxane (col.3, lines 54-59).

Decamethylcyclopentasiloxane conforms to the chemical formula 3 of the instant claim, wherein,  $R^3$  is methyl, which is a linear  $C_1$  alkyl unsubstituted; x is 10 and y is 5.

Regarding **claim 6**, Weidner et al teaches all the claim limitations as set forth above. The tetraethoxysilane (col.9, lines 27-28) is a silane and it comprises silicon, oxygen, carbon and hydrogen.

Regarding **claim 7**, Weidner et al teaches all the claim limitations as set forth above. The tetraethoxysilane is a silane that conforms to chemical formula 4 of the instant claim, wherein  $R^6$  is ethoxy which is a linear  $C_2$  alkoxy; and p is 0.

Regarding **claim 8**, Weidner et al teaches all the claim limitations as set forth above and further inherently teaches the method wherein the amount of the catalyst is 0.0121mol based on about 1 mol of the silane compound.

**Calculation:**

The molar mass of tetraethoxysilane is 208.33g/mol, there are 900g of tetraethoxysilane in the composition of Example 2, therefore  $900/208.33 = 4.32$  mol;

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the molar mass of hexamethyldisiloxane is 162.38g/mol, there are 350g of hexamethyldisiloxane in the composition of Example 2, therefore  $350/162.38 = 2.155$  mol;

the total number of moles of the silane compound is  $4.63 + 2.155 = 6.785$ ;

methylamine account for  $40/100 \times 6.4 = 2.56$ g of the methylamine in water solution; the molar mass of methylamine is 31.1g/mol; therefore  $2.56/31.1 = 0.082$  mol;

the amount of methylamine based on about 1 mol of the silane compound is  $0.082/6.785 = 0.0121$ .

Regarding **claim 9**, Weidner et al teaches all the claim limitations as set forth above and further teaches heating the mixture under reflux at 78oC (col.9, lines 30-31).

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLATUNDE S. OJURONGBE whose telephone number is (571)270-3876. The examiner can normally be reached on Monday-Thursday, 7.15am-4.45pm, EST time, Alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571)272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

O.S.O.

/Randy Gulakowski/  
Supervisory Patent Examiner, Art Unit 1796